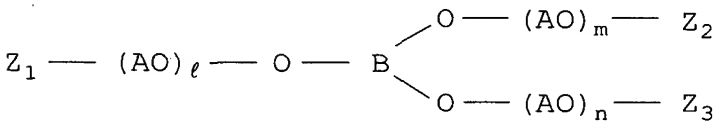
WHAT IS CLAIMED IS:

1. A lithium secondary battery having a positive electrode and a negative electrode which reversibly intercalate and deintercalate lithium and an electrolyte containing an ion conductive material and an electrolytic salt, where said ion conductive material contains a boron-containing compound represented by the following formula (1):



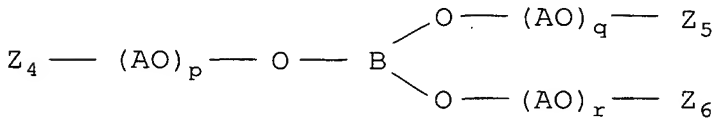
... (1)

wherein B represents a boron atom; Z_1, Z_2 and Z_3 each represent an organic group having an acryloyl group or a methacryloyl group or a hydrocarbon group of 1-10 carbon atoms, with the proviso that one or two of Z_1, Z_2 and Z_3 are the organic groups having an acryloyl group or a methacryloyl group; AO represents an oxyalkylene group of 1-6 carbon atoms and comprises one or two or more of the oxyalkylene groups; and ℓ, m and n each represent an average degree of polymerization of the oxyalkylene group and is more than 0 and less than 4.

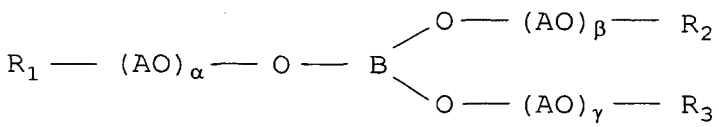
2. A lithium secondary battery according to claim 1, wherein the electrolyte contains a polymer obtained by polymerizing the boron-containing compound represented by the formula (1).

3. A lithium secondary battery having a positive

electrode and a negative electrode which reversibly intercalate and deintercalate lithium and an electrolyte containing an ion conductive material and an electrolytic salt, where the ion conductive material comprises a polymerizable composition which contains a boron-containing compound represented by the following formula (2) and a boron-containing compound represented by the following formula (3) and which has a molar ratio of the compound of the formula (2) and the compound of the formula (3) [(molar number of the compound of the formula (3))/(molar number of the compound of the formula (2))] of 0.1-4:



... (2)



... (3)

wherein B represents a boron atom; Z_4, Z_5 and Z_6 each represent an organic group having an acryloyl group or a methacryloyl group or a hydrocarbon group of 1-10 carbon atoms, with the proviso that at least one of Z_4, Z_5 and Z_6 is said organic group having an acryloyl group or a methacryloyl group; R_1, R_2 and R_3 each represent a hydrocarbon group of 1-10 carbon atoms; AO represents an oxyalkylene group of 1-6 carbon atoms and comprises one or two or more of the oxyalkylene groups; and p, q,

r, α, β and γ each represent an average degree of polymerization of the oxyalkylene group and is more than 0 and less than 4.

4. A lithium secondary battery according to claim 3, wherein the electrolyte contains a polymer obtained by polymerizing the polymerizable composition.

5. A lithium secondary battery according to claim 1, wherein the electrolytic salt is at least one of $LiPF_6$, $LiN(CF_3SO_2)_2$, $LiClO_4$, $LiBF_4$, $LiAsF_6$, LiI, LiBr, LiSCN, $Li_2B_{10}Cl_{10}$ and $LiCF_3CO_2$.

6. A lithium secondary battery according to claim 2, wherein the electrolytic salt is at least one of $LiPF_6$, $LiN(CF_3SO_2)_2$, $LiClO_4$, $LiBF_4$, $LiAsF_6$, LiI, LiBr, LiSCN, $Li_2B_{10}Cl_{10}$ and $LiCF_3CO_2$.

7. A lithium secondary battery according to claim 3, wherein the electrolytic salt is at least one of $LiPF_6$, $LiN(CF_3SO_2)_2$, $LiClO_4$, $LiBF_4$, $LiAsF_6$, LiI, LiBr, LiSCN, $Li_2B_{10}Cl_{10}$ and $LiCF_3CO_2$.